IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re Patent Application of: | ) | Conf. No.: 5876 |
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| Schiessl | ) | |
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| Application No.: 10/589,079 | ) | Group Art Unit: 1793 |
| | ) | |
| Filed: August 11, 2006 | ) | Examiner: VELASQUEZ |
| | ) | |
| For: Method for producing a component by reshaping a plate, and device for carrying out said method | ) | |

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Sir:

This is an appeal from the final rejection of claims mailed June 23, 2010. A notice of Appeal and a pre-Appeal Brief were filed on August 11, 2010. A decision on the pre-Appeal Brief was mailed October 12, 2010.

The fee of $510.00 set forth in 37 C.F.R. § 41.20(b)(2) is paid by credit card. Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account 14.1437. Please credit any excess fees to such account.

REAL PARTY IN INTEREST:

The real party in interest is Audi AG, Ingolstadt, Germany.

RELATED APPEALS AND INTERFERENCES:

To the best of the undersigned's knowledge, there are no related interferences or judicial proceedings.

STATUS OF CLAIMS:

Claims 26 – 44 are pending in the application and are being appealed. Claims 1 – 25 are cancelled.

STATUS OF AMENDMENT:

No amendment to the claims or to the specification was filed after the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER:

The invention claimed in independent claim 26 relates to a method of forming a component, comprising: heating an aluminum coated steel blank to an austenization temperature (See original specification at page 5, second paragraph, reference numeral 7 in Figure 1, hot forming curve 20 in Figure 2); rapidly cooling said blank (See original specification at page 5, second paragraph, cooling zone 8 in Figure 1); storing said heat treated blank at room temperature for an interval of time (See original specification at page 5, second paragraph, intermediate storage 9 in Figure 1); heating said cooled, heat treated blank a second time to an austenization temperature greater than or equal to 850°C (See original specification at page 5, third paragraph, reference numeral 11 in Figure 1, hot forming curve 20 in Figure 3); and forming said blank while heated to produce said component (See original specification at page 5, third paragraph, reference numeral 14 in Figure 1). All other claims are dependent on claim 26. Summary of the subject matter of the dependent claims is omitted as unnecessary.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL:

I. The Office action erred by rejecting claim 38, citing 35 U.S.C. §112, first paragraph.

II. The Office action erred by rejecting claims 26 – 29 and 32 – 42, citing 35 U.S.C. §103(a), U.S. 3,337,376 to Grange (hereinafter, "Grange '376"), Schmoeckel, "Metal Forming (Warm): Comparison with Hot and Cold Forming," Vol. 6, Encyclopedia of Materials (hereinafter, "Schmoeckel"), US 3,057,050 to Hodge et al. (hereinafter, "Hodge"), and optionally US 3,891,474 to Grange (hereinafter, "Grange '474").

III. The Office action erred by rejecting claims 30 and 44, citing 35 U.S.C. §103(a), Grange '376, Schmoeckel, Hodge, and optionally Grange '474 and Hassell et al., "Induction Heat Treating of Steel," Vol. 4, ASM Handbooks (hereinafter, "Hassell").

IV. The Office action erred by rejecting claim 31, citing 35 U.S.C. §103(a), Grange '376, Schmoeckel, Hodge, and optionally Grange '474, and US 2002/0069506 to Brodt et al. (hereinafter, "Brodt").

V. The Office action erred by rejecting claim 43, citing 35 U.S.C. §103(a), Grange '376, Schmoeckel, Hodge, and optionally Grange '474, and Smith "Continuous Furnances," Vol. 4, ASM Handbook.

ARGUMENT:

The rejection under 35 U.S.C. §112, first paragraph is in error, because page 3 of the specification explains the invention can involve decoupling the sequences of a continuous process. Therefore, the specification discloses that the second manufacturing process as currently claimed can be continuous.

The rejections under 35 U.S.C. §103 are also in error. Grange '376 does not disclose storing a heat treated blank at room temperature for an interval of time. According to column 2, lines 29 – 33 of Grange '376, "[a]fter performing one of the [disclosed] methods to produce an austenite-free microstructure, and either cooling to room temperature or reheating immediately, the steel is then reheated rapidly to a temperature in the range of 1425 to 1600°F." Grange '376 does not disclose storing at

room temperature for an interval of time. To the contrary, Grange '376 makes clear that when room temperature is reached, the steel is reheated rapidly. Furthermore, at column 3, lines 65 – 68, Grange '376 states,

> the sample was held in the oil barely long enough to reach the temperature of the bath before proceeding with the next step in order to minimize microcracks. It has been found that the formation of microcracks is time-dependent and immediate reheating after quenching in warm oil will minimize microcracking.

Therefore, Grange '376 strongly teaches away from storing the blank.

Moreover, Grange '376 does not relate to an aluminum coated steel blank. The methods described in Grange '376 are, therefore, irrelevant to the patentability of the presently claimed subject matter, which employs an aluminum coated steel blank. For this reason, it seems that US 3,891,474 to Grange (hereinafter, "Grange '474") is slightly more relevant. However, at col. 2, lines 46 – 52, Grange '474 describes carburization of steel, quenching the steel to room temperature, storing the quenched steel at room temperature, and reheating the steel to a temperature below 950°F (510°C). Therefore, Grange '474 provides no reason to arrive at the requirements of claim 1, which include heating a cooled, heat treated blank a second time to an austenization temperature greater than or equal to 850°C. To the contrary, Grange '474 teaches away from the present invention. None of the secondary references compensate for these shortcomings.

The Director is hereby authorized to charge any deficiency in fees filed, asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account 14-1437. Please credit any excess fees to such account.

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CLAIMS APPENDIX:

1 – 25. (Canceled)

26. A method of forming a component, comprising:

heating an aluminum coated steel blank to an austenization temperature;

rapidly cooling said blank;

storing said heat treated blank at room temperature for an interval of time;

heating said cooled, heat treated blank a second time to an austenization temperature greater than or equal to 850°C; and

forming said blank while heated to produce said component.

27. A method according to claim 26 wherein the interval of the initial heating of said blank is in the range of 9 to 30 minutes.

28. A method according to claim 26 wherein the conditions of the second heat treatment are controlled so as not to increase the layer thickness of the blank.

29. A method according to claim 26 wherein the interval of the subsequent heating of said blank is in the range of 10 seconds to 2 ½ minutes.

30. A method according to claim 26 including varying the heat applied to different portions of the surface of the blank.

31. A method according to claim 26 including reinforcing said blank between the first heating and the second heating.

32. A method according to claim 26 including maintaining said blank in a heated condition while forming.

33. A method according to claim 26, wherein the first heating step causes an increase in layer thickness of the aluminum coating.

34. The method according to claim 26, wherein prior to the storing step, the method further comprises transporting the heat treated blank to a storage area.

35. The method according to claim 26, wherein the step of heating the aluminum coated steel blank takes place in a first manufacturing process, and wherein the step of heating the cooled, heated treated blank takes place in a second manufacturing process.

36. The method according to claim 35, wherein the first manufacturing process and the second manufacturing process are decoupled.

37. The method according to claim 35, wherein the first manufacturing process is continuous.

38. The method according to claim 35, wherein the second manufacturing process is continuous.

39. The method according to claim 26, wherein for at least a portion of the interval of time, the heat treated blank is allowed to stand at room temperature.

40. The method according to claim 26, wherein the step of heating the aluminum coated steel blank takes place at a first location, and wherein the step of heating the cooled, heated treated blank takes place at a second location.

41. The method according to claim 26, wherein the step of heating the aluminum coated steel blank takes place at a first facility, and wherein the step of heating the cooled, heated treated blank takes place at a second facility.

42. The method according to claim 26, wherein the step of heating the aluminum coated steel blank takes place at a first furnace, and wherein the step of heating the cooled, heated treated blank takes place at a second furnace.

43. The method according to claim 42, wherein the first furnace is selected from the group consisting of a continuous furnace and a revolving furnace, and wherein the second furnace is an induction furnace.

44. The method according to claim 26, wherein the step of heating said cooled, heat treated blank is performed in a transport device comprising an inductor.